35 U.S.C. §101 rejections

In the appeal decision mailed March 16, 2011 claims 201 through 214 are rejected under 35 U.S.C. §101 as representing non-statutory subject matter. The Assignee notes that claim amendments have obviated these rejections.

35 U.S.C. §103 rejections

In the appeal decision mailed March 16, 2011 claims 157 through 181 and 201 through 214 are rejected under 35 U.S.C. §103(a) as being obvious in view of U.S. Patent 6,671,673 (hereinafter, Baseman) in combination with Packwood (U.S. Patent 7,006,992) Tamayo (U.S. Patent 6,836,773) and in view of Ching (U.S. Patent 6,078,901). The Assignee notes that claim amendments have obviated these rejections. In particular:

1) The primary basis for the rejections was the portion of the Baseman specification that described the use of constrained mathematical models to model tradeoffs between a risk and profit (or value) in the objective function in order to optimize the design of a new supply chain. The optimized designs are then stress tested using scenario simulation (see Baseman, C8, L21). This teaches away from the invention described in the instant specification that uses the results from scenario simulations to measure risk and identify an optimal set of activities. Put another way, Baseman teaches that scenario simulations are used to test the robustness of optimal solutions. The instant application teaches that scenario simulation results are analyzed in order to develop optimal solutions. The independent claims have been amended to highlight this difference.

2) The only constrained mathematical models Baseman discusses using are linear programs and mixed integer programs (the combination is mentioned 21 times). As is well known in the art, the objective functions of linear and mixed integer programs are limited to analyzing and optimizing exact values that change in a linear manner. As is also well known in the art, real options and contingent liabilities change in a nonlinear, exponential fashion. As such, the cited portion of Baseman could not support the optimization of real option value and/or contingent liability risk. This is particularly true since the specification teaches that the value of the real options and contingent liabilities depend on more than one variable and would be impossible to even approximate using a linear objective function.

3) The specification of the instant application also detailed the fact that the value of the current operation and market sentiment categories of value may also be nonlinear. For the same reasons discussed under 2) above, the cited portion of Baseman could not support the optimization of changes (such as a change caused by a risk management activity) to a

current operation or market sentiment category of value when the changes in value for these categories of value are nonlinear.

4) As is well known in the art, event risks often cause nonlinear changes in expected value and the cited portion of the Baseman specification could not support the optimization of these types of risks for the same reasons discussed under 2) and 3) above.

5) As correctly noted by the BPAI, Baseman mentions real options. However, Baseman only mentions real options to note that others are studying them. Baseman teaches away from the analysis and optimization of real options by claiming the use of portfolio management which implicitly teaches mean variance optimization without considering real option values and by teaching the use of option analytics such as those taught by Sandretto in place of real option analysis.

6) Five of the optimization techniques Baseman discusses (the BPAI mentioned only two of them) are shown in the table below along with the optimization techniques taught in U.S. Patents 5,148,365, 5,799,287, 6,278,981 (hereinafter, Dembo1, 2 and 3) and 6,308,162 (hereinafter, Ouimet). A review of the table shown below should make it obvious that all of these methods teach away from method of the claimed invention for optimizing value, risk and combinations thereof.

	Type	Optimize What?	Details
Baseman #1	Global	Linear Risk, Linear Profit (& Value)	Linear Program (LP) and Mixed Integer Program (MIP) with single objective function
Baseman #2	Global	Linear Risks, Linear Profit (& Value) and Other Linear Goals	LP and MIP with multiple objective functions (see Baseman C14, L45; C15, L33; C20, L31; C21, L8 and C22, L18)
Baseman #3	Global	Market Value and Market Risk	Mean Variance (implicit in claimed use of Portfolio Management – see Baseman claim #1)
Baseman #4	Global	Profit and Risk	Estimate the loss in profitability associated with designing a supply chain to reduce risk. Keep making changes as long as this "opportunity cost" is less than the cost of obtaining a similar position with traditional financial risk management techniques.
Baseman #5	Global	Profit and Risk	Network design software. As noted in the Bradley, Hax and Magnanti reference this software comprises a linear program.
Ouimet #1	User controlled	Stochastically modified primary goal	Simulated annealing of a planning model where: the user specified secondary goals* modify the primary goal to form an effective goal (claim 1)
Ouimet #2	User controlled	Stochastically modified primary goal	The user reviews the solutions to different combinations of primary goals and weighted secondary goals* and selects the combination of goals and weights he or she likes best (claim 2)

Dembo #1	Weighted Average Scenario	Resource allocation/ Portfolio replication	(i) computing a solution to a deterministic problem under all scenarios and assigning a probability value to each solution and (ii) solving a co-ordinating or tracking model to find a single feasible policy to the problem (block 108)
Dembo #2	Weighted Average Scenario	Risk adjusted profit/Portfolio replication	Generating an electronic representation of a replicating portfolio for a given target portfolio that will achieve the maximum risk-adjusted profit for a given set of future scenarios. *Note: compression destroys the detail required for risk management at anything other than the portfolio level*
Dembo #3	All Scenarios	Portfolio replication	Acting on the set of replicating instruments, the target portfolio and the set of scenarios, a simulation module determines the values of every instrument in the target portfolio under every scenario at the specified time points. The results of the simulation module are then input to an optimization problem module, which formulates a linear programming problem to find the optimal replicating portfolio. *Note: compression destroys the detail required for risk management at anything other than the portfolio level*

* secondary goals are called "scenarios" in Ouimet

7) The cited portion of Baseman teaches away from the claimed use of measured risks that consist of expected reductions in value. In particular, the cited portion of Baseman is primarily in the supply chain design section. As such, there are no actual risks to measure and the risks are modeled in the objective function. This is apparently completed in a manner similar to that described by Hodder where risk is defined as aversion to variance (consistent with the claimed use of Portfolio Management where risk is defined as variance).

8) Baseman also teaches away from analyzing value and risk by category of value, by component of value, by segment of value and/or by element of value.

9) It is also worth noting that the best mode declared by Baseman teaches away from the primary approach cited by the BPAI (Baseman 1). Claim 1 calls for the use of Portfolio Management which implicitly teaches mean variance optimization (Baseman 3).

Support for amendments/claim additions

1) Support for the amendments made to claim 157 is as follows:

a) the preamble was changed to correct clerical errors;

b) the first clause was amended to include data acquired from external databases as shown in FIG. 1 and as described in pages 15 through 49 of the specification;

c) material originally included in claim 158 regarding scenarios was moved into this claim (see pages 82 and 83 of the specification for additional support);

d) material originally included in claim 159 regarding the real option category of value was

moved into this claim (see Table 2, page 10 of the specification for more support),

e) material originally included in claim 201 regarding contingent liabilities was moved into this claim (see Table 2, page 10 of the specification for more support), and

f) the remainder of the claim amendment corrects clerical errors.

2) Support for the amendments made to claim 158 is not required as the claim was only changed to remove the material added to claim 157 and to fix clerical errors,

3) Support for the amendments made to claims 159 is not required as the claim was only changed to remove the material added to claim 157 and to fix clerical errors,

4) Support for the amendments made to claims 160, 161, 162 and 163 is not required as the amendments only fixed clerical errors.

5) Support for the amendments made to claims 164 is not required as the amendment only removed limitations for elements of value already included in the claim that do not physically exist and fixed clerical errors.

6) Support for the amendments made to claims 165 and 166 is not required as the amendments only fixed clerical errors.

7) Support for the amendment made to claim 167 can be found by noting that the amendment added material originally included in claims 201 and 207 regarding the different types of risks. The amendment also includes material from Table 2 on page 10 that disclosed the use of real option algorithms to measure contingent liability values.

8) Support for the amendments made to claim 168 can be found in the specification that describes an enterprise that physically exists with its market value derived from the current operation, real option and market sentiment categories of value (see Table 2, page 10). As is well known in the art, the value of real options and contingent liabilities generally change in a nonlinear, exponential manner. The specification also teaches that the value of the current operation and market sentiment categories of value are both dependent upon a plurality of elements of value and external factors and that their value may also change in a nonlinear manner (see pages 50 through 78 of the specification). The specification also teaches that risks reduce the expected value of the categories value (see pages 79 through 84 of the specification). As such any activities implemented to manage risk would change the value of at least one category of value. As discussed in the preceding sentences these value changes may be nonlinear; Also see the remarks section of this paper for additional support.

The remaining claim amendments and additions mirror the claim amendments discussed above as detailed in the Table below

Claim	Similar claim amendments/additions
157	Amendments to claim 169 were similar to those made to claim 157 while incorporating material first described in claim 163, claim 201 was amended to be a method claim that mirrors claims 157 and 169. Claim 210 was amended to mirror claim 201
158	Scenarios - Amendments to claim 170 were similar to those made to claim 158, claims 205 was amended and claim 219 was added to be similar to claim 158 while adding a definition of scenario obtained from material on page 82 of the specification
159	Categories - Amendments to claim 171 were similar to those made to claim 159, claims 203 and 211 were amended to be similar to claim 159
160	Combination - Amendments to claim 172 were similar to those made to claim 160, claims 206 and 212 were amended to be similar to claim 160
161	Control - Amendments to claim 173 were similar to those made to claim 161
162	Transfer - Amendments to claim 174 were similar to those made to claim 162, claim 213 was amended to be similar to claim 162
163	Model - Amendments to claim 175 were similar to those made to claim 163, claim 208 and claim 211 were amended to be similar to claim 163
164	Elements - Amendments to claim 177 were similar to those made to claim 164, claim 207 was amended and claim 215 was added to be similar to claim 164
165	Optimize - Amendments to claim 178 were similar to those made to claim 165, claim 202 was amended and claim 216 was added to be similar to claim 165
166	Algorithms - Amendments to claim 179 were similar to those made to claim 166
167	Types - Amendments to claim 180 were similar to those made to claim 167, claims 204 and 214 were amended to be similar to claim 167
168	Nonlinear - Amendments to claim 176 were similar to those made to claim 168, claim 209 was amended and claims 217 & 218 was added to be similar to claim 168

Claim 181 was also amended to correct clerical errors.

Statement under 37 CFR 1.111

37 CFR 1.111 requires that the basis for amendments to the claims be pointed out after consideration of the references cited or the objections made. The Assignee notes that the independent claims were amended to include an important step and that the addition of said step obviates prior rejections. Having said that, the Assignee notes that the primary reason the claims were amended was to put the claims in a final form for allowance and issue.

Reservation of rights

The Assignee hereby explicitly reserves the right to present the previously modified and/or canceled claims for re-examination in their original format. The cancellation or modification of pending claims to put the instant application in a final form for allowance and issue is not to be

construed as a surrender of subject matters covered by the original claims before their cancellation or modification.

Conclusion

The pending claims are of a form and scope for allowance. Prompt notification thereof is requested.

Respectfully submitted,

Asset Trust, Inc.

/B.J. Bennett/

B.J. Bennett, President

Date: April 30, 2011